

I. **REMARKS**

The final Office Action dated November 5, 2008, has been received and carefully noted. The amendments made herein and the following remarks are submitted as a full and complete response thereto.

Claims 1-5, 7, and 10-24 are pending.

No amendments to the claims or specification are made at this time.

Rejection over Zolotnitsky et al.

Claims 1-5, 7, 10-16, and 18-24 were rejected under 35 U.S.C. § 103(a) over Zolotnitsky et al. (U.S. Patent Application Publication No. 2001/0003124). Applicants traverse the rejection.

Claim 1 of the present application is directed to "[f]oamable compositions consisting of: A) 50-99.9% by weight of a chlorotrifluoroethylene (CTFE) polymer consisting of at least 90% by moles of CTFE; B) 5-30% by weight of a nucleating agent; and C) optionally one or more thermal stabilizers, UV stabilizers, pigments, flame retardants, and reinforcing agents; wherein said foamable compositions do not contain any foaming agents other than component B); and wherein the polymer A) is a CTFE copolymer with one or more comonomers selected from: perfluoroalkylvinylethers, I...; dioxoles having... formula... (I)..., wherein Y is equal to  $OR_f$  wherein  $R_f$  is a perfluoroalkyl having from 1 to 5 carbon atoms, or  $Y = Z$  as defined below;  $X_1$  and  $X_2$ , equal to or different from each other, are  $-F$  or  $-CF_3$ ; Z is selected from  $-F$ ,  $-H$ ,  $-Cl$ ; acrylic monomers having general formula... (II)..., wherein  $R_1$  is a hydrogenated radical from 1 to 20 C atoms,  $C_1$ - $C_{20}$ , alkyl, linear and/or branched, or cycloalkyl radical, or  $R_1$  is H, wherein  $R_1$  optionally contains: heteroatoms; one or more functional groups and

double bonds; vinylidene fluoride (VDF) and/or tetrafluoroethylene (TFE)." Claims 2-5, 7, and 10-24 depend from independent claim 1.

Before commenting on the pending rejection, Applicants submit the following comments. Applicants submit that the technical problem of the presently claimed invention includes finding fluoropolymer-based compositions that can be prepared and transformed, for example, into foamed coatings or articles having improved electrical insulation properties (see specification, page 3, lines 15-18). The specification, on page 8, also states that an object of the presently claimed invention is to prepare foamed molded articles by extrusion or thermomolding of compositions comprising components A) and B), as recited in the claims. Applicants submit that by thermomolding or thermoextruding a foamable composition, the obtained articles are foamed. In some preferred embodiments, the formed articles can have a void percentage higher than 10% by volume and an average cell size lower than 100 microns.

Applicants submit that they have unexpectedly found that the above-described technical problem is solved by foamable compositions of CTFE-based polymers consisting of at least 90% by moles of CTFE (see specification, page 5, last line, and Examples 1 and 3). Moreover, Applicants submit that the foamable compositions of the presently claimed invention can be used to form electric wire coatings having a low dielectric constant and low  $\tan \delta$  at high frequencies. Applicants submit that the use of the foamable compositions of the presently claimed invention allows one to obtain wires and cables having low attenuation, which is a property that is useful for applications such as optical fibers (see specification, page 2, lines 11-13, and page 8, lines 21-23).

Applicants submit that Zolotnitsky et al. does not teach or suggest the presently claimed invention. Applicants submit that according to the present claim 1, component

A) is a polymer consisting of at least 90% by moles of CTFE. Further, when component A) is a copolymer, Applicants submit that the amount of CTFE monomer in the copolymer compositions is at least 90% by moles, as recited in claim 1. Applicants submit that, as recited in claim 1, polymer A) is a CTFE copolymer with one or more comonomers selected from perfluoroalkylvinylethers, dioxoles, acrylic monomers, and vinylidene fluoride (VDF) and/or tetrafluoroethylene (TFE) (see claim 1). Therefore, Applicants submit that the copolymers of present claim 1 can include:

- CTFE at least 90% by moles + perfluoroalkylvinylethers,
- CTFE at least 90% by moles + dioxoles,
- CTFE at least 90% by moles + acrylic monomers,
- CTFE at least 90% by moles + vinylidene fluoride (VDF),
- CTFE at least 90% by moles + tetrafluoroethylene (TFE),
- CTFE at least 90% by moles + a mixture of one or more of the comonomers selected from perfluoroalkyl-vinylethers, dioxoles, acrylic monomers, vinylidene fluoride (VDF) and tetrafluoroethylene (TFE) .

Applicants submit that one of ordinary skill in the art would not read, in the copolymers of claim 1, the presence of an ethylene comonomer, such as the ethylene-CTFE copolymers disclosed in Zolotnitsky et al.

Applicants further submit that the compositions disclosed in Zolotnitsky et al. are incapable of being foamed. Applicants refer to Example 6 of Zolotnitsky et al., which Applicants submit shows a composition that cannot be foamed. Applicants note Table 2 of Zolotnitsky et al. (see col. 6), which Applicants submit clearly shows that the mechanical properties of Example 6 are typical of a plastic material that is not foamed. In fact, Applicants submit that, as seen in Table 2, the composition of Example 6 has

an elastic modulus of 280 MPa, a stress at yield 10 MPa, a stress at break of 28 MPa, and

an elongation at break of 270%. Applicants submit that the above-mentioned mechanical properties cannot be found in a foamed specimen having, for example, a void percentage higher than 10% by volume and average cell size lower than 100 micron (see the present specification, page 8, fourth paragraph).

Further, Applicants note that in Table 2, the composition described in Example 5, which does not contain Polymist®, is shown to have the same mechanical properties as the composition described in Example 6, which contains Polymist®. In addition to not containing Polymist®, Applicants note that the composition in Example 5 also does not contain any other nucleating or foaming agents. Applicants further note that the compositions disclosed in Examples 5 and 6 use the polymer defined in paragraph [0066], which contains ethylene 40% by moles, chlorotrifluoroethylene 55% by moles, and n-butylacrylate 5% by moles.

Applicants note that in the present specification, mechanical properties are not reported, as they have no significance on a foamed specimen having, for example, a void percentage higher than 10% by volume and average cell size lower than 100 micron. Applicants note that in electrical insulation applications, such as those in which the claimed compositions can be used, particular mechanical properties such as the ones disclosed in Zolotnitsky et al. are not required.

Applicants submit that those of ordinary skill in the art who are seeking to solve the technical problem of the presently claimed invention (obtaining fluoropolymer-based compositions suitable for foamed coatings or articles having improved electrical insulation properties), would not refer to Zolotnitsky et al. For example, Applicants

submit that Zolotnitsky et al. does not teach or suggest that foamable polymer compositions can be obtained by increasing the CTFE monomer to at least 90% by moles as in component A) of present claim 1, without the presence of an ethylene comonomer, which is taught to be an essential component in Zolotnitsky et al., and by adding nucleating agents in amounts of 5-30% by weight, without using any foaming agent.

Applicants further remark that the technical problem of Zolotnitsky et al. is directed to thermoplastic fluoropolymers having a high time to ignition, and a low smoke and heat release when put in contact with a heat source (see paragraph [0001]). Applicants submit that at paragraph [0046], Zolotnitsky et al. states that optional ingredients are fillers, such as PTFE, which is exemplified in Example 6. Applicants submit that Zolotnitsky et al. does not mention any foaming properties, for example void % or average void sizes. Applicants note that in preferred embodiments of the presently claimed invention, the composition can have 35% of voids, and the size of the obtained cells range from 10 to 50 micron (see specification, page 12, lines 3-5).

Therefore, Applicants submit that those of ordinary skill in the art, seeking to find foamable polymer compositions having improved insulation properties would not refer to Zolotnitsky et al., and based on the teachings of Zolotnitsky et al., would not arrive at the presently claimed invention.

For at least the above reasons, Applicants respectfully request reconsideration and withdrawal of the rejection of claims 1-5, 7, 10-16, and 18-24 under 35 U.S.C. § 103(a) over Zolotnitsky et al.

Rejection over Zolotnitsky et al. and Abusleme et al.

Claims 1-5, 7, and 10-24 were rejected under 35 U.S.C. § 103(a) over Zolotnitsky et al. and Abusleme et al. (U.S. Patent No. 6,107,393). Applicants traverse the rejection.

Claims 1-5, 7, and 10-24 have been discussed above.

Zolotnitsky et al., and its deficiencies, have also been discussed above.

Applicants submit that Abusleme et al. does not cure the deficiencies of Zolotnitsky et al. Applicants submit that Abusleme et al. is directed to thermoprocessable, fluorinated polymers comprising ethylene copolymers such as E-CTFE for flexible cables. Applicants submit that Abusleme et al. does not teach or suggest foamable compositions.

Therefore, Applicants submit that those of ordinary skill in the art, seeking to find foamable polymer compositions having improved insulation properties would not refer to Zolotnitsky et al. and Abusleme et al., and based on the teachings of Zolotnitsky et al. and Abusleme et al., would not arrive at the presently claimed invention.

For at least the above reasons, Applicants respectfully request reconsideration and withdrawal of the rejection of claims 1-5, 7, 10-16, and 18-24 under 35 U.S.C. § 103(a) over Zolotnitsky et al. and Abusleme et al.

II. **CONCLUSION**

Applicants respectfully submit that this application is in condition for allowance and such action is earnestly solicited. If the Examiner believes that anything further is desirable in order to place this application in even better condition for allowance, the Examiner is invited to contact Applicants' undersigned representative at the telephone number listed below to schedule a personal or telephone interview to discuss any remaining issues.

In the event this response is not timely filed, the Applicants hereby petition for an appropriate extension of time. The fee for this extension, along with any other additional fees which may be required with respect to this response, may be charged to Deposit Account No. 01-2300, referencing Attorney Docket No. **108910-00129**.

Respectfully submitted,



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